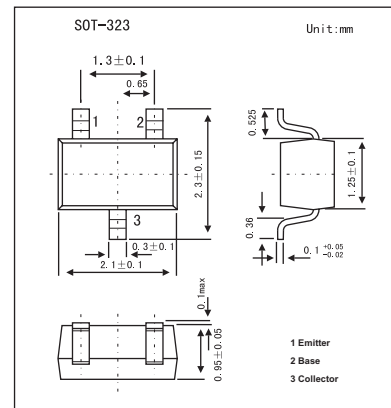


## NPN General Purpose Transistor

## BC846W,BC847W,BC848W

## ■ Features

- Low current (max. 100 mA).
- Low voltage (max. 65 V).

■ Absolute Maximum Ratings  $T_a = 25^\circ\text{C}$ 

| Parameter                                   | Symbol        | BC846W      | BC847W | BC848W | Unit             |
|---|---------------|-------------|--------|--------|------------------|
| Collector-base voltage                      | $V_{CB0}$     | 80          | 50     | 30     | V                |
| Collector-emitter voltage                   | $V_{CE0}$     | 65          | 45     | 30     | V                |
| Emitter-base voltage                        | $V_{EB0}$     | 6           | 6      | 5      | V                |
| Collector current                           | $I_C$         | 100         |        |        | mA               |
| Peak collector current                      | $I_{CM}$      | 200         |        |        | mA               |
| Peak base current                           | $I_{BM}$      | 200         |        |        | mA               |
| Total power dissipation                     | $P_{tot}$     | 200         |        |        | mW               |
| Junction temperature                        | $T_j$         | 150         |        |        | $^\circ\text{C}$ |
| Storage temperature                         | $T_{stg}$     | -65 to +150 |        |        | $^\circ\text{C}$ |
| Operating ambient temperature               | $R_{amb}$     | -65 to +150 |        |        | $^\circ\text{C}$ |
| Thermal resistance from junction to ambient | $R_{th\ j-a}$ | 625         |        |        | K/W              |

**BC846W,BC847W,BC848W**

## ■ Electrical Characteristics Ta = 25°C

| Parameter                            |                 | Symbol               | Testconditons  | Min | Typ | Max | Unit |
|--------------------------------------|-----------------|----------------------|--|-----|-----|-----|------|
| Collector cutoff current             |                 | ICBO                 | V <sub>CB</sub> = 30 V; I <sub>E</sub> = 0   |     |     | 15  | nA   |
|                                      |                 | ICBO                 | V <sub>CB</sub> = 30 V; I <sub>E</sub> = 0; T <sub>j</sub> = 150 °C                          |     |     | 5   | μA   |
| Emitter cutoff current               |                 | IEBO                 | V <sub>EB</sub> = 5 V; I <sub>C</sub> = 0  |     |     | 100 | nA   |
| DC current gain                      | BC846W          | h <sub>FE</sub>      | I <sub>C</sub> = 2 mA; V <sub>CE</sub> = 5 V   | 110 |     | 450 |      |
|                                      | BC847W,BC848W   |                      |  | 110 |     | 800 |      |
|                                      | BC846AW,BC847AW |                      |  | 110 | 180 | 220 |      |
|                                      | BC846BW,BC847BW |                      |  | 200 | 290 | 450 |      |
|                                      | BC847CW         |                      |  | 420 | 520 | 800 |      |
| Collector-emitter saturation voltage |                 | V <sub>CE(sat)</sub> | I <sub>C</sub> = 10 mA; I <sub>B</sub> = 0.5 mA  |     | 90  | 250 | mV   |
|                                      |                 |                      | I <sub>C</sub> = 100 mA; I <sub>B</sub> = 5 mA; *  |     | 200 | 600 | mV   |
| Base-emitter saturation voltage      |                 | V <sub>BE(sat)</sub> | I <sub>C</sub> = 10 mA; I <sub>B</sub> = 0.5 mA  |     | 700 |     | mV   |
|                                      |                 |                      | I <sub>C</sub> = 100 mA; I <sub>B</sub> = 5 mA; *  |     | 900 |     | mV   |
| Base-emitter voltage                 |                 | V <sub>BE</sub>      | I <sub>C</sub> = 2 mA; V <sub>CE</sub> = 5 V   | 580 | 660 | 700 | mV   |
|                                      |                 |                      | I <sub>C</sub> = 10 mA; V <sub>CE</sub> = 5 V  |     |     | 770 | mV   |
| Collector capacitance                |                 | C <sub>C</sub>       | V <sub>CB</sub> = 10 V; I <sub>E</sub> = I <sub>C</sub> = 0; f = 1 MHz                       |     |     | 3   | pF   |
| Transition frequency                 |                 | f <sub>r</sub>       | V <sub>CE</sub> = 5 V; I <sub>C</sub> = 10 mA; f = 100 MHz                                   | 100 |     |     | MHz  |
| Noise figure                         |                 | NF                   | I <sub>C</sub> = 200 μA; V <sub>CE</sub> = 5 V; R <sub>S</sub> = 2 kΩ; f = 1 kHz; B = 200 Hz |     |     | 10  | dB   |

\* Pulse test: t<sub>p</sub> ≤ 300μs, δ ≤ 0.02.■ h<sub>FE</sub> Classification

| TYPE    | BC846W | BC846AW | BC846BW |
|---------|--------|---------|---------|
| Marking | 1D     | 1A      | 1B      |

| TYPE    | BC847W | BC847AW | BC847BW | BC847CW |
|---------|--------|---------|---------|---------|
| Marking | 1H     | 1E      | 1F      | 1G      |

| TYPE    | BC848W |
|---------|--------|
| Marking | 1M     |